

A. REMARKS

The Examiner is thanked for the performance of another search. In this reply, Claim 18 has been canceled and Claims 1-4, 6-9, 16, 17, 20-22, 25-28 and 30-32 have been amended. Hence, Claims 1-4, 6-9, 16, 17, 19-23, 25-28 and 30-32 are pending in this application. The amendments to the claims do not add any new matter to this application. Furthermore, the amendments to the claims were made to improve the readability and clarity of the claims and not for any reason related to patentability. All issues raised in the Office Action mailed August 5, 2004 are addressed hereinafter.

REJECTION OF CLAIM 1 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The stated basis of the rejection is that "[i]t is unclear that how the first work is sent to a third node to execute and what node provides a second work request to a third process on the third node." The basis of this rejection appears to raise two separate issues. With respect to "how the first work is sent to a third node to execute," Claim 1 has been amended to clarify that third work request provided to the third node specifies that the second portion of the first work is to be performed and also that results of performing the second portion of the first work are to be provided directly to the first process. As to "what node provides a second work request to a third process on the third node," Claim 1 does not specify a particular entity providing the third work request to the third node, since a variety of entities and mechanism may perform this function, e.g., any type of intermediary. It is respectfully submitted, however, that the functionality of method Claim 1 is sufficiently definite to satisfy the requirements of 35 U.S.C. § 112, second paragraph. The Examiner is invited to contact the undersigned by telephone if the

Examiner believes that there are any issues remaining under 35 U.S.C. § 112, second paragraph, and if the Examiner believes that such contact would be helpful.

In view of the foregoing, it is respectfully submitted that Claim 1 satisfies the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, reconsideration and withdrawal of the rejection of Claim 1 under 35 U.S.C. § 112, second paragraph, is respectfully requested.

REJECTION OF CLAIMS 1-4, 6-9, 16-23 AND 25-28 UNDER 35 U.S.C. § 103(a)

Claims 1-4, 6-9, 16-23 and 25-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Boutcher*, U.S. Patent No. 6,493,768 (hereinafter "*Boutcher*") in view of "*obviousness in the art*." Claims 30-32 were not specifically included in this rejection, but since reasons were provided in the Office Action in support of rejecting these claims over *Boutcher* and the "*obviousness in the art*," it is assumed that they were meant to be included and are addressed hereinafter as if they were. This rejection is now moot with respect to canceled Claim 18. It is respectfully submitted that Claims 1-4, 6-9, 16, 17, 19-23, 25-28, and 30-32 are patentable over *Boutcher* and the "*obviousness in the art*" as set forth in the Office Action for at least the reasons provided hereinafter.

CLAIM 1

Claim 1, as amended, recites a method for processing data on a distributed computing system that includes a plurality of nodes that requires:

“maintaining mapping data that specifies work that can be performed by the plurality of nodes;

in response to receiving, from a first process on a first node from the plurality of nodes, a first work request to perform first work, determining based upon the first work and the mapping data, that a first portion of the first work is to be performed on a

second node from the plurality of nodes and that a second portion of the first work is to be performed on a third node from the plurality of nodes;
providing a second work request to a second process on the second node, wherein the second work request specifies that the first portion of the first work is to be performed and that results of performing the first portion of the first work are to be provided directly to the first process;;
providing a third work request to a third process on the third node, wherein the third work request specifies that the second portion of the first work is to be performed and that results of performing the second portion of the first work are to be provided directly to the first process.”

It should be initially pointed out that Claim 1 and *Boutcher* address completely different problems. Claim 1 addresses the problem of how to reduce communications overhead associated with processing distributed transactions. *Boutcher*, on the other hand, addresses the problem of how to provide for execution of remote procedure calls (RPCs) when changes in versions of client and/or server software cause version incompatibilities that prevent normal execution of RPCs. A client process uses a version map to format an RPC into a format that is compatible with a destination server so that the RPC can be executed normally.

Furthermore, it is respectfully submitted that Claim 1 includes one or more limitations that are not in any way taught or suggested by *Boutcher* and the “*obviousness in the art*” set forth in the Office Action, considered alone or in combination. For example, Claim 1 requires “maintaining mapping data that specifies work that can be performed by the plurality of nodes.” *Boutcher* does not teach or suggest maintaining any type of mapping data as recited in Claim 1. The version map of *Boutcher* describes how to map one version of a remote procedure call that is supported by a client process to another version of the remote procedure call that is supported by the server process. The version map is used to reformat remote procedure calls and does not provide any indication of the type of work that can be performed by server processes or nodes.

Thus, the “mapping data” recited in Claim 1 is not taught or suggested by the version map of *Boutcher*.

As another example, Claim 1 requires that a determination be made, based upon a first work request to perform first work received from a first process on a first node and the mapping data, that portions of the first work are to be performed on two nodes, i.e., the second and third nodes. Two separate work requests are sent to the two nodes and specify that results of performing the first work are to be provided directly back to the first process on the first node. This functionality is completely absent from *Boutcher* and the “*obviousness in the art*” relied upon in the Office Action. *Boutcher* does not in any way teach or suggest determining, based upon a remote procedure call and mapping data, that portions of the work specified in the remote procedure call are to be performed on two separate nodes and then providing two separate remote procedure calls to the two separate nodes. In *Boutcher*, each remote procedure call issued by a client process is reformatted and sent to a server process for execution. Thus, the issuance of a remote procedure call by a client process results in a single remote procedure call being received and processed by a server process. There is no notion in *Boutcher* of providing multiple work requests to multiple nodes in response to a single work request, as is required by Claim 1.

In view of the foregoing, it is respectfully submitted that Claim 1 includes one or more limitations that are not taught or suggested by *Boutcher* and the “*obviousness in the art*,” alone or in combination and is therefore patentable over *Boutcher* and the “*obviousness in the art*.”

CLAIMS 2-4 AND 6-9

Claims 2-4 and 6-9 depend from Claim 1 and include all of the limitations of Claim 1. It is therefore respectfully submitted that Claims 2-4 and 6-9 are patentable over *Boutcher* and the

“*obviousness in the art*” for at least the reasons set forth herein with respect to Claim 1.

Furthermore, it is respectfully submitted that Claims 2-4 and 6-9 recite additional limitations that independently render them patentable over *Boutcher* and the “*obviousness in the art*.”

CLAIMS 16-19

Claims 16-19 include limitations similar to Claims 1-4 and 6-9, except in the context of a distributed computing system. It is therefore respectfully submitted that Claims 16-19 are patentable over *Boutcher* and the “*obviousness in the art*” for at least the reasons set forth herein with respect to Claims 1-4 and 6-9.

CLAIMS 20-23 AND 25-28

Claims 20-23 and 25-28 include limitations similar to Claims 1-4 and 6-9, except in the context of a computer-readable medium. It is therefore respectfully submitted that Claims 20-23 and 25-28 are patentable over *Boutcher* and the “*obviousness in the art*” for at least the reasons set forth herein with respect to Claims 1-4 and 6-9.

CLAIMS 30-32

It is respectfully submitted that Claim 31 includes one or more limitations that are not in any way taught or suggested by *Boutcher* and the “*obviousness in the art*,” alone or in combination. For example, Claim 31 recites “maintaining mapping data that specifies work that can be performed by the plurality of nodes.” Claim 1 recites this identical limitation and as set forth herein with respect to Claim 1, *Boutcher* and the “*obviousness in the art*” do not teach or suggest this limitation. As another example, Claim 31 also requires “determining based upon the first work and the mapping data, that the first work is to be performed on a second node from the plurality of nodes.” Assuming that the version map of *Boutcher* is considered to be the

“mapping data” recited in Claim 31, then the limitation of “determining based upon the first work and the mapping data, that the first work is to be performed on a second node from the plurality of nodes” is not taught or suggested by *Boutcher* because, as previously discussed herein, the version map of *Boutcher* does not indicate work that can be performed on nodes. It is therefore respectfully submitted that Claim 31 recites one or more limitations that are not taught or suggested by *Boutcher* and the “*obviousness in the art*.”

Claims 30 and 32 recite limitations similar to Claim 31, except in the context of a method and computer-readable medium, respectively.

In view of the foregoing, reconsideration and withdrawal of the rejection of Claims 1-4, 6-9, 16, 17, 19-23 and 25-28 under 35 U.S.C. § 103(a) as being unpatentable over *Butcher* in view of the *obviousness in the art* is respectfully requested.

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested. If there are any additional charges, please charge them to Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

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On October 28, 2004 By


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